Research to Operational Capability – UK MoD's Approach to Developing Soldier Systems for the Future

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- Military Requirements for soldier systems
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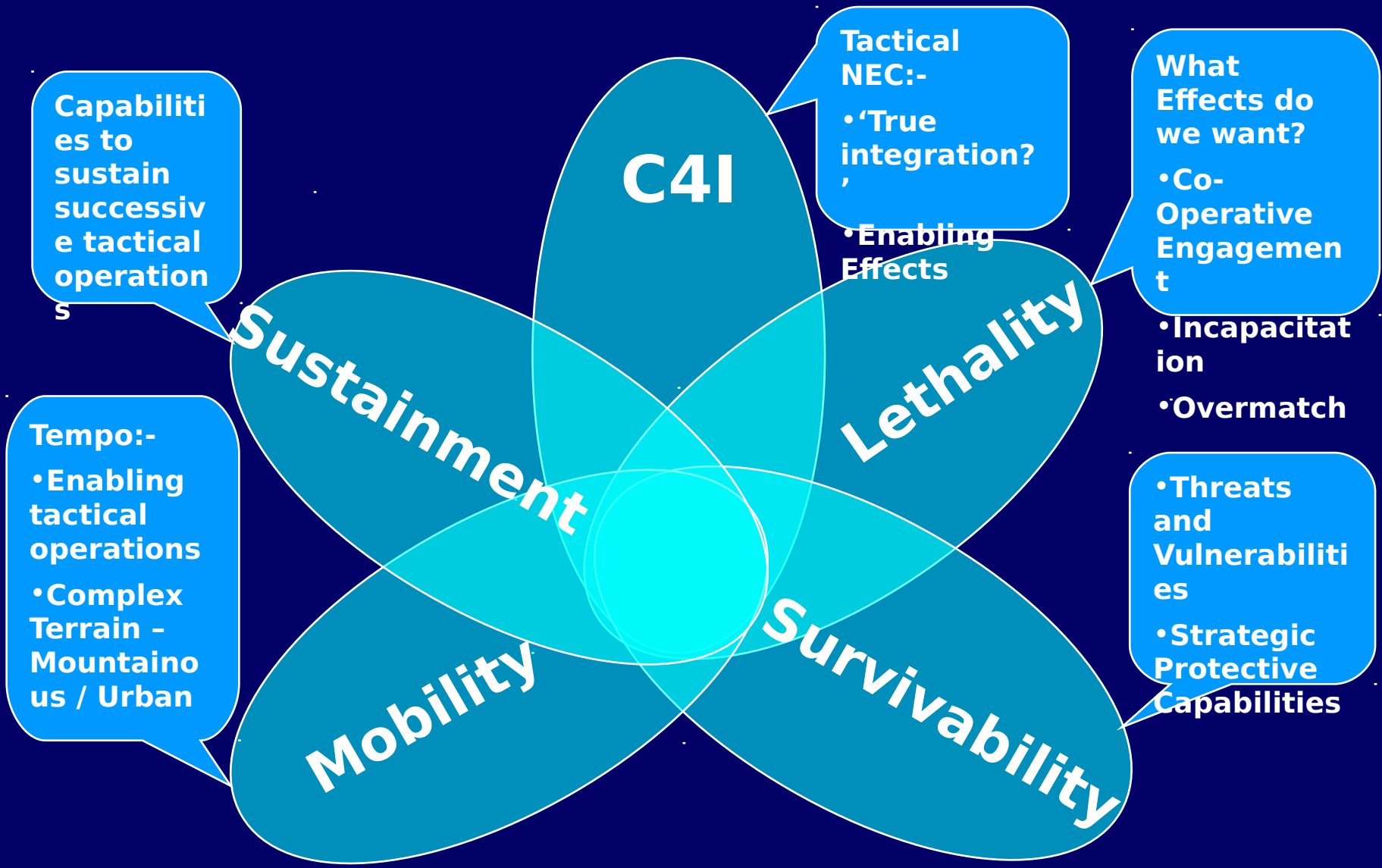
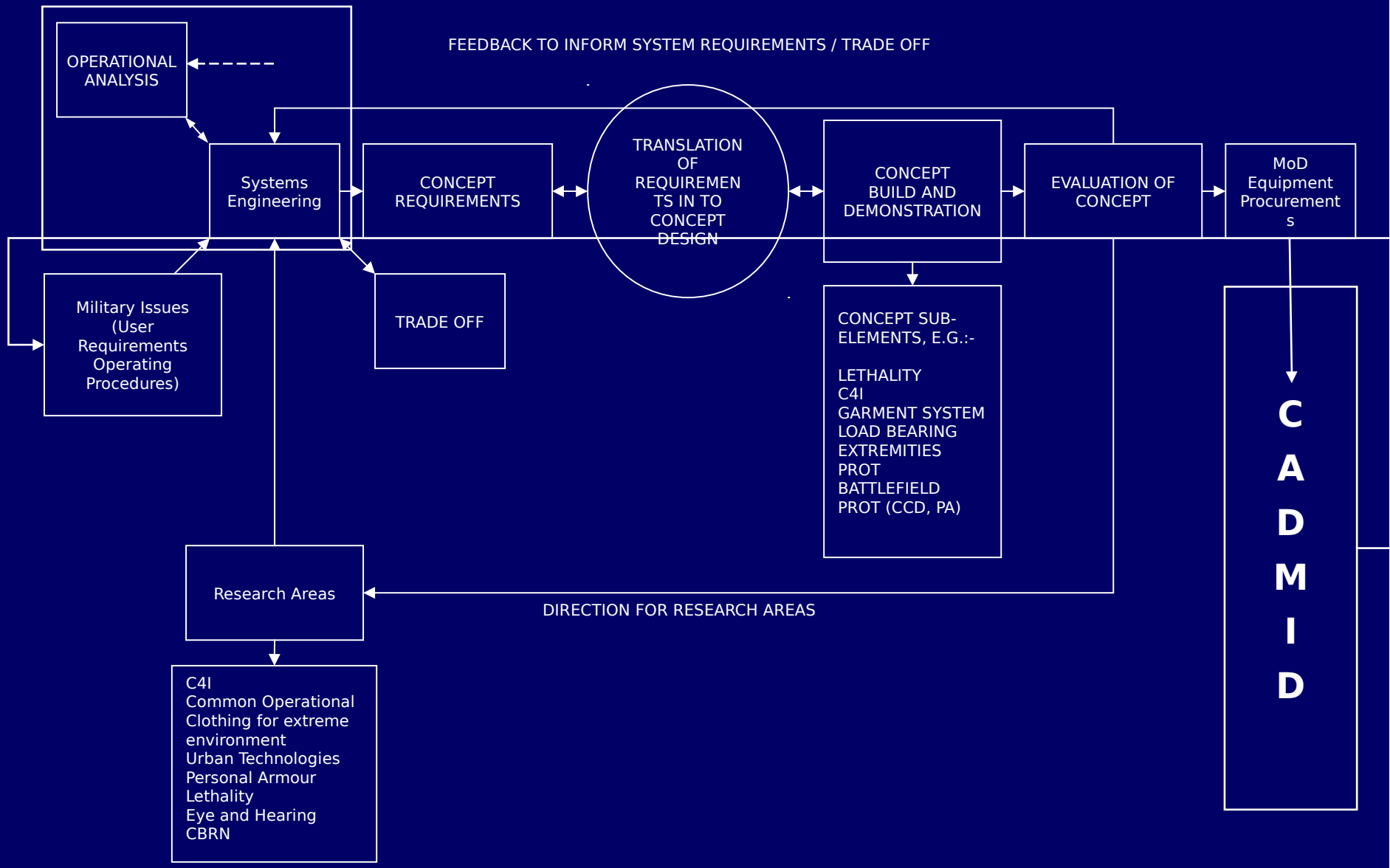
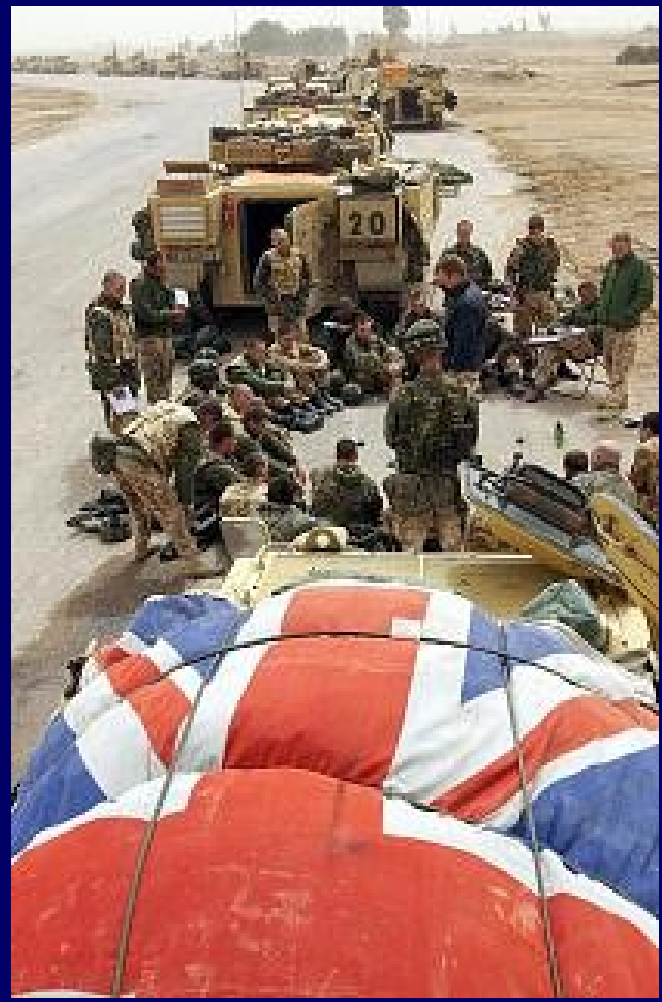
Establishing Capability Gaps




OPERATIONAL ANALYSIS
FEEDBACK TO INFORM SYSTEM REQUIREMENTS / TRADE OFF
Systems Engineering
CONCEPT REQUIREMENTS
TRANSLATION OF REQUIREMENTS IN TO CONCEPT DESIGN
CONCEPT BUILD AND DEMONSTRATION
EVALUATION OF CONCEPT
MoD Equipment Procurements
Military Issues (User Requirements Operating Procedures)
TRADE OFF
CONCEPT SUB-ELEMENTS, E.G.:-
LETHALITY
C4I
GARMENT SYSTEM
LOAD BEARING EXTREMITIES PROT
BATTLEFIELD PROT (CCD, PA)
C A D M I D
Research Areas
DIRECTION FOR RESEARCH AREAS
C4I
Common Operational Clothing for extreme environment
Urban Technologies
Personal Armour
Lethality
Eye and Hearing
CBRN

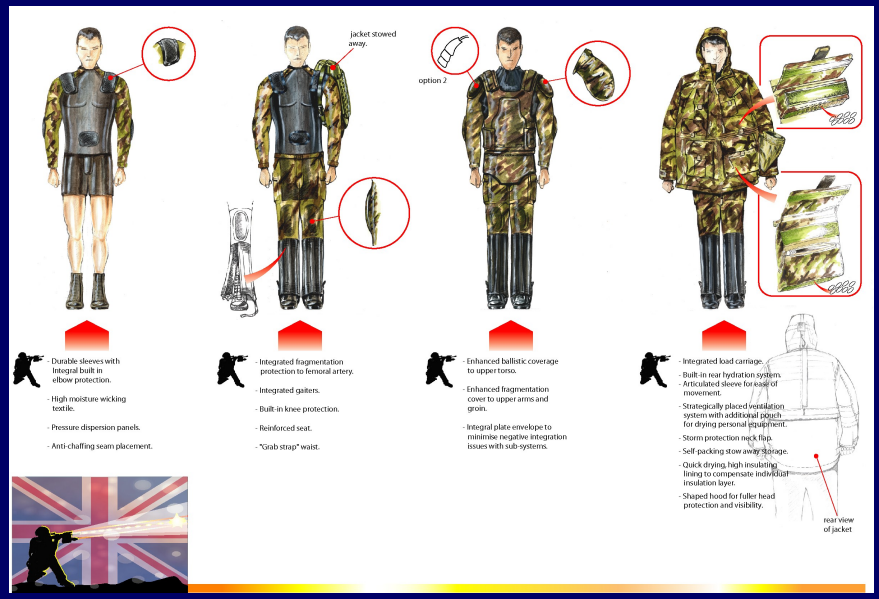
Military Requirements for Soldier Systems

- Determining Military Requirements for the 2010 – 2025 timeframe
- Enable Equipment Programme Management
  - Identify Capability Requirements
- Enduring Nature of Close Combat
  - All soldier tasks – not just dismounted infantry
  - Common – Tri-Service
- Ensure FIST Coherency – Evidence to support the FIST vision



Concept Demonstration

- Concept System Requirements – derived from system analysis
- Evaluation Criteria (Fightable Standards)
- Concepts to inform user requirements
- Validation of Operational Analysis and Systems Studies


jacket stowed away.
option 2
- Durable sleeves with Integral built in elbow protection.
- High moisture wicking textile.
- Pressure dispersion panels.
- Anti-chaffing seam placement.
- Integrated fragmentation protection to femoral artery.
- Integrated gaiters.
- Built-in knee protection.
- Reinforced seat.
- "Grab strap" waist.
- Enhanced ballistic coverage to upper torso.
- Enhanced fragmentation cover to upper arms and groin.
- Integral plate envelope to minimise negative integration issues with sub-systems.
- Integrated load carriage.
- Built-in rear hydration system.
- Articulated sleeve for ease of movement.
- Strategically placed ventilation system with additional pouch for drying personal equipment.
- Storm protection neck flap.
- Self-packing stow away Storage.
- Quick drying, high insulating lining to compensate individual insulation layer.
- Shaped hood for fuller head protection and visibility.
rear view of jacket

Case Study - PECOC

Personnel Protection:

Determination of Protection level levels and candidate technologies

Load Carriage and Common Operational Clothing:

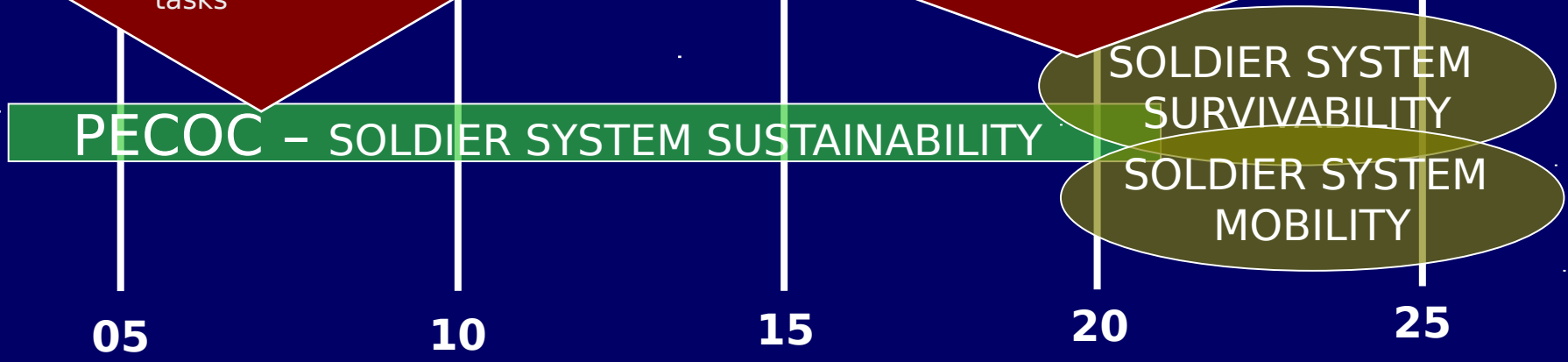
Identification of 'high level' user requirements and contribution to combat effectiveness and Human Factors

Task Specific Equipment:

Identification of user tasks

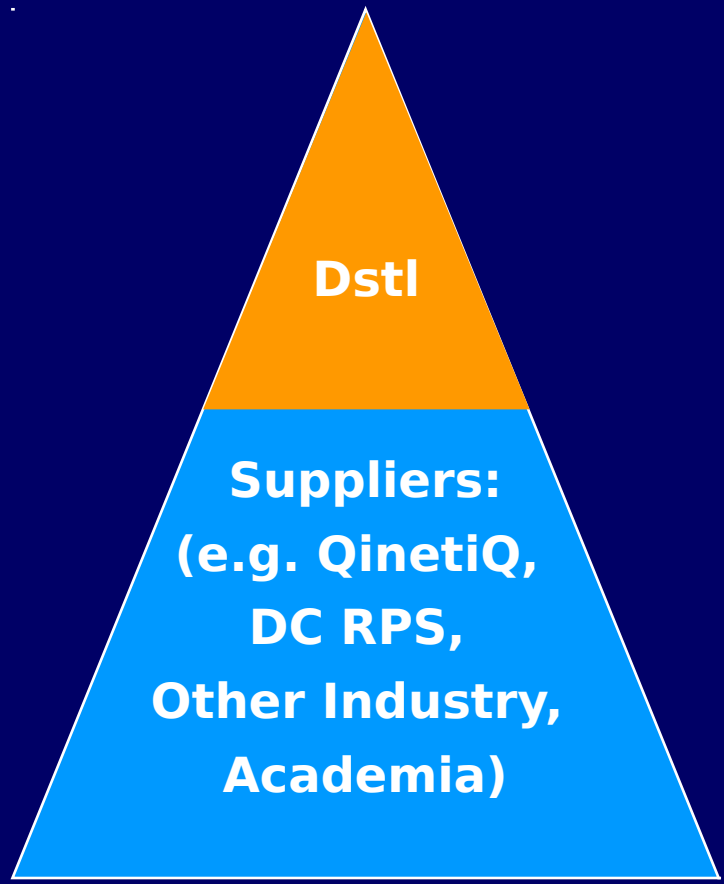
Robust Systems Analysis and Concepts approach to soldier systems:

- Investigated candidate technologies
- Establish the contribution of technology to combat effectiveness
- Mature suitable technologies
- Concept demonstration to identify user requirements



Soldier Modernisation Programme

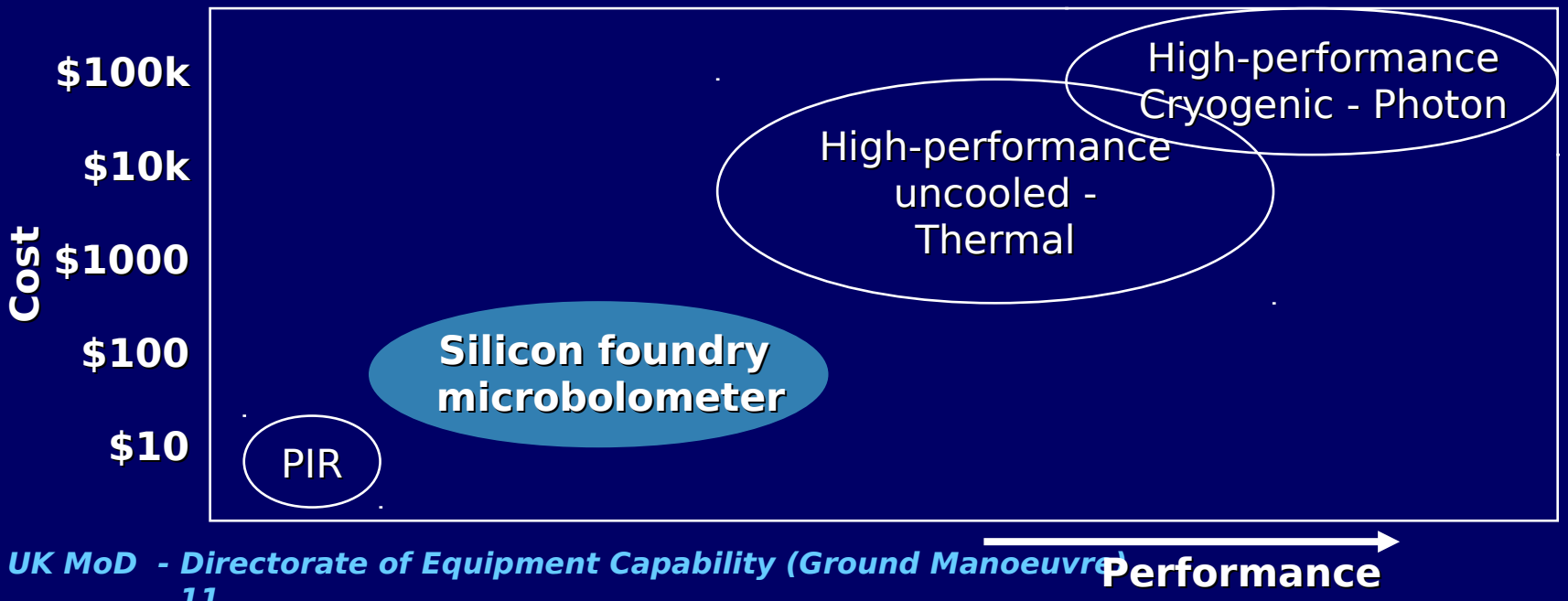
- To be conducted by Defence Science and Technology Laboratories (Dstl)
- Co-ordination and strategic capabilities framework
  - Systems and Operational Analysis
  - Demonstration of a robust process from identification of capability gaps to requirements definition and validation
- Integration
  - Functional – concept demonstration
  - Lines of Development
  - Military Processes – Doctrine



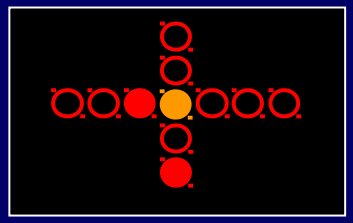
Integrated Soldier Technology

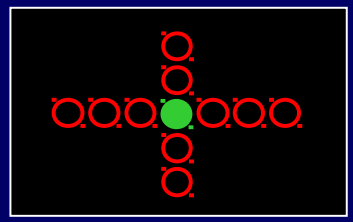
- To be conducted by QinetiQ
- Support to strategic capability framework
- To undertake concept and technology demonstrations
- Work packages include:
  - Integrated Energy Studies
    - Power Sources
    - Bio-Physical
  - Head mounted systems
  - Tactical NEC
  - Soldier Status Monitoring

Enabling Sensor Technologies

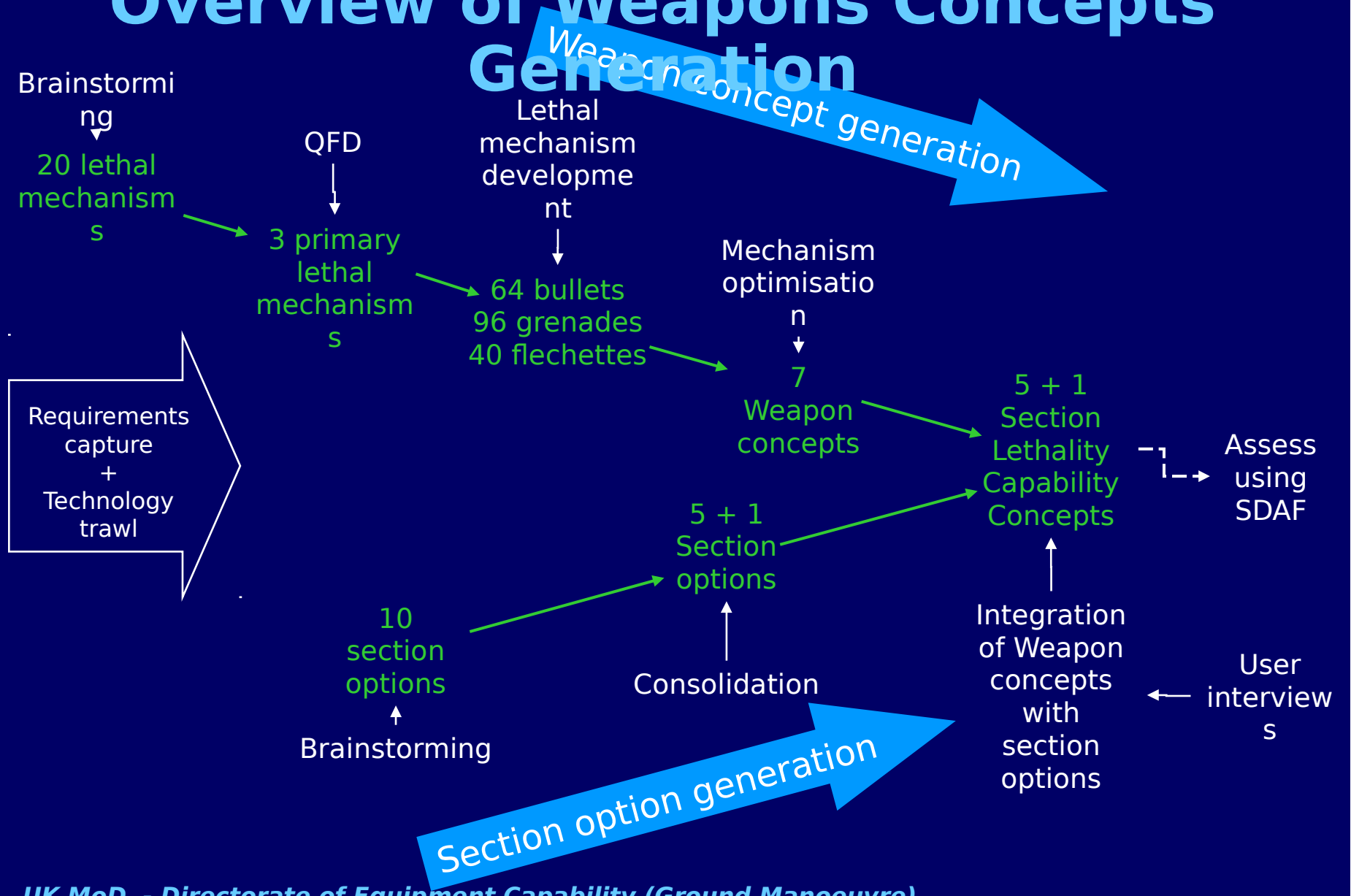


IST – Proof of FIST Concept





Overview of Weapons Concepts Generation



Conclusions

- Enduring Requirement for soldier systems
  - Reality of getting affordable capabilities
- Retain top level systems studies (including OA) capability
  - Dependent on collaboration and involvement with industrial and international partners
- Long term vision
  - Changing Requirements – Three Block War?
  - Flexible research programme